Dholakia, Umesh

From: Angel Berrios [Angel.Berrios@erm.com]
Sent: Tuesday, August 20, 2013 9:19 PM
To: Dholakia, Umesh
Cc: leimarysdelgado@jca.gobierno.pr; Beatriz.Rivera@essroc.com
Subject: RE: Essroc GHG determination
Attachments: Essroc Answer to Request for Information; RE: Essroc Answer to Request for Information; 0171815 Net Emission GHG Calculation Essroc .pdf

Umesh,
Please see below for answers to your questions are in red. Also, I am including the recalculation of emissions for the purpose to include the emissions of other fuels. According to the emission estimates the use of biomass as a fuel will not trigger PSD for GHG. As stated in the past email if EPA issued new guidance or decide to continue with the biomass exemption a new assessment will be performed to determine the applicability of PSD or will continue to be under the umbrella of the exemption.

If you have any question do not hesitate to contact me.
Angel

From: Dholakia, Umesh [mailto:Dholakia.Umesh@epa.gov]
Sent: Tuesday, August 13, 2013 1:39 PM
To: Angel Berrios
Cc: Beatriz.Rivera@essroc.com; leimarysdelgado@jca.gobierno.pr
Subject: RE: Essroc GHG determination

Angel:

Will ESSROC explain how 2004/2005 emission number 228,637 tons was arrived at?

We made a recalculation to add information of the GHG pollutants and GHG emissions. For the purpose of the calculation we obtained the information of the consumption of fuel for fuel oil number 2 (diesel) and used oil which are the fuels used at the facility. The estimates were performed using the information from 40 CFR Part 98 Subpart C Appendix Table C-1 and C-2.

The following are the equation for the emission estimates for the pollutants CO2, CH4 and N2O.

Pollutant = Fuel * HHV* EF*0.00110231131

Pollutant = Annual Pollutant mass emissions for the specific fuel type (short tons).

Fuel = Mass or volume of fuel combusted per year, mass in short tons for solid fuel, and volume in gallons for liquid fuel.

HHV = Default high heat value of the fuel, from Table C-1 of this subpart (mmBtu per mass or mmBtu per volume, as applicable).

EF = Fuel-specific default CO_2 emission factor, from Table C-1or C-2 of this subpart (kg Pollutant/mmBtu).

0.00110231131 = Conversion factor from kilograms to metric short tons.

The information was corrected to include the calculations form the use of used oil. The results are the following:

	Pollutants (tons Year)		
	CO2	CH4	N2O
Fuel Oil Number2	228,637.37	24.29	3.53

(Diesel)			
Used Oil	12,859.82	0.52	0.10
TOTAL	241,497.19	24.81	3.64

The number for the each pollutant will be the following: 241,497.19 tons per year for CO2, 24.81 tons per year for CH4 and 3.64 tons per year for N2O.

Baseline actual GHG should include all fuels use during the entire year and for future projected emissions using biomass should include biomass GHG and other fuels that will be used to produce almost the same amount of cement.

The Non PSD emission analysis letter dated January 18, 2013, established a baseline actual emissions (BAE) using the average of clinker production for the 2-year period of 2004-2005 of 579,763 tons/year of production. The Projected Actual Emissions (PAE) is established at the same production capacity of clinker as the BAE at 579,763 tons/year.

It is estimated that with 70,000 tons per year of biomass it is estimated total production of 241,305 tons of clinker per year. The balance of clinker that will be produced with coal or used oil will be estimated at 338,458 tons of clinker per year. The amount of clinker produced using coal or use was estimated subtracting the amount of the PAE clinker production less the production of clinker using biomass.

	Production of Clinker Per Year
PAE	579,763
Biomass	241,305
Coal & Fuel Oil	441,245

The following table shows that the net emission increase is below the threshold established in the rule.

PTE Emissions Green House Gases Wood & Wood Residuals **Essroc D**

Pollutants	Total Emissions Biomass PAE (tons/year)	Total Emissions 2004 & 2005 BAE (tons/year)	Net Emission Increase (tons/year)	Global Warming Potential[2]	Tot CO2
CO2	239,076.49	241,497.19	(2,420.70)	1.00	
CH4	51.55	24.81	26.74	21.00	
N2O	6.96	3.64	3.32	310.00	

1. The fuel emission factors for each pollutant are listed on 40 CFR Part 98 Subpart C Appendix Table C-1 and C-2.
2. The Global Warming Potential for each of the pollutants are listed on 40 CFR Part 98 Subpart A Appendix Table A.
3. PAE - Projected to Actual Emissions
4. BAE - Baseline Actual Emissions

Also, we are including a recalculation of the GHG emissions estimates for the use of biomass as a fuel. The results is that the facility will not be subject to PSD regulations for GHG pollutants emissions and GHG emissions.
What is mton? Is it metric ton or mega ton or million ton? It is metric tons.

I do not recall if 70,000 tons of biomass takes care of 100% of cement production..will it?
? 70,000 tons/year represent up to 35 percent of the heat needed for cement production. See email of March 7, 2013. Also, the February 27, 2013 is included with information regarding the information send it to your office for these estimate.

Thanks

Umesh

From: Angel Berrios [mailto:Angel.Berrios@erm.com]
Sent: Monday, August 12, 2013 7:35 AM
To: Dholakia, Umesh
Cc: Beatriz.Rivera@essroc.com; leimarysdelgado@jca.gobierno.pr
Subject: Essroc GHG determination

Umesh,

The following is the analysis that was performed to determine the applicability of Green House Gases (GHG) submitted to EQB. This determination was made considering the court decision to vacate the exemption to comply with GHG federal regulation for biomass burning facilities. In this case the determination was made since we have a construction permit pending at EQB and the Air Quality Area requested such determination.

Essroc would like to make clear that if EPA issued new guidance or decide to continue with the biomass exemption a new assessment will be performed to determine the applicability of PSD or will continue to be under the umbrella of the exemption.

The evaluation was performed using the following guidance document: ***PSD and Title V Permitting Guidance for Greenhouse Gases***. This guidance document establish that:

PSD applies to GHGs, if:

Part A

1. *Modification is otherwise subject to PSD (for another regulated NSR pollutant), and*
2. *Has a GHG emissions increase and net emissions increase:*

a. *Equal to or greater than 75,000 TPY CO2e, and*
b. *Greater than -0- TPY mass basis*

OR BOTH:

Part B

1. ***The existing source has a PTE equal to or greater than:***

a. ***100,000 TPY CO2e and***
b. ***100/250 TPY mass basis***

and

2. ***Modification has a GHG emissions increase and net emissions increase:***

a. ***Equal to or greater than 75,000 TPY CO2e, and***

b. ***Greater than -0- TPY mass basis***

The following is the PSD determination for GHG.

For the purpose of Part A, Essroc submitted a Non PSD applicability that was approved by EPA on March 29, 2013. Since the use of biomass as a fuel is not considered a significant increase for the purpose of PSD (criteria pollutants) Part A.1, does not apply. Therefore, Part A. is not applicable to the use biomass as a fuel in the kiln.

Since Part A is not applicable then we evaluate Part B for GHG PSD purposes. Essroc is considered a major source for GHG. Since Essroc is considered a major source of GHG, we evaluate for Part B.2. to determine if the emissions are above the ***75,000 TPY CO2e*** and the mass emissions of the is greater than 0 TPY.

The following table includes the results of Essroc calculation regarding GHG. According to the evaluation certainly the emissions of GHG are above 0 TPY but the modification is below the 75,000 TPY ***CO2e*** threshold making the modification not subject to the requirements of GHG major modification.

PTE Emissions Green House Gases Wood & Wood Residuals Essroc Dorado, P.R.

Pollutants	Total Emissions Biomass (tons/year)	Total Emissions 2004 & 2005 (tons/year)	Net Emission Increase (tons/year)	Global Warming Potential	Total Emi CO2eq (ton
CO2	111,317.00	228,637.37	(117,320.37)	1.00	(117
CH4	37.98	24.29	13.69	21.00	
N2O	4.98	3.53	1.45	310.00	
					(116

If you have any question you can contact me or Beatriz Rivera at beatriz.rivera@essroc.com.

Angel

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